



**National  
Transportation  
Safety Board**

**Crash During Test Flight  
Gulfstream GVI (G650)  
Roswell, New Mexico, April 2, 2011**

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# History of Flight

- April 2, 2011
- 0934 mountain daylight time
- Experimental Gulfstream G650
- Crashed during takeoff
- Roswell, New Mexico
- Two pilots and two flight test engineers fatally injured



Concrete structure



# Probable Cause

- Aerodynamic stall and uncommanded roll during one-engine-inoperative takeoff test
- Improperly developed takeoff speeds
- Unrecognized takeoff safety speed error

# Probable Cause (Continued)

- Persistent attempts to achieve an erroneous takeoff safety speed
- Inadequate investigation of previous G650 uncommanded roll events
- Estimate of in-ground-effect stall angle too high



# Contributing Factors

- Ineffective management of flight test program
- Aggressive program schedule without adequate
  - Definition of roles and responsibilities
  - Technical planning and oversight
  - Identification of potential hazards
  - Assurance that appropriate risk controls were in place and functioning as intended

# Deficiencies in Program Management

- Technical planning and oversight
- Program scheduling
- Safety risk management

# Technical Planning and Oversight

- Ineffective distribution of workload
- Data from previous tests not used to refine speeds before testing progressed
- Inadequate controls and validation processes



# Program Schedule

- Ambitious schedule
- Frequent delays
- Unachievable deadlines

# Safety Management

- No formal identification of stall-related events as potential hazard during continued takeoff testing
- Gulfstream's safety management program lacking in the area of safety assurance
- Previous stall-related events not adequately investigated



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